DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1.   A request for continued examination under 37 CFR 1.114, including the fee set

forth in 37 CFR 1.17(e), was filed in this application after allowance or after an Office

action under *Ex Parte Quayle*, 25 USPQ 74, 453 O.G. 213 (Comm'r Pat. 1935). Since

this application is eligible for continued examination under 37 CFR 1.114, and the fee

set forth in 37 CFR 1.17(e) has been timely paid, prosecution in this application has

been reopened pursuant to 37 CFR 1.114. Applicant's submission filed on 7/16/08 has

been entered.

Information Disclosure Statement

2.   Regarding the information disclosure statement (IDS) submitted on 7/16/08,

please note that the Non-Patent Literature Document, Item 1, in said IDS fails to comply

with all the requirements of 37 CFR 1.97 and 37 CFR 1.98, however this document has

been considered. A line is drawn through the Document's citation to show that it is non-

compliant. The reason that this document is non-compliant is because it is not a

published document.

Examiner's Note

3.   Regarding the preamble of claim 27, please note that it has been determined that

Figure 2 and Paragraph 0029 of the Specification of the Instant Application provides the

necessary support for the language of the preamble of claim 27.

Examiner's Amendment

4.   An examiner's amendment to the record appears below. Should the changes

and/or additions be unacceptable to applicant, an amendment may be filed as provided

by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be

submitted no later than the payment of the issue fee.

5.   Authorization for this examiner's amendment was given during a telephone

interview with Linda G. Gunderson on 08/05/08.

       The application has been amended as follows:

6.   Claim 17 has been replaced with the following:

              - - A method for determining signal time of arrival in a wireless

       communication system, comprising:

              receiving wireless signals on an antenna;

              analyzing the received signals to determine correlation signal levels at

       predetermined points in time;

determining a maximum signal level at a selected one of the predetermined points in time;

generating a second order mathematical model of a predetermined response function using the maximum signal level at the selected one of the predetermined points in time and correlation signal levels from predetermined points in time adjacent the selected one of the predetermined points in time;

determining a time associated with a peak correlation signal level based on the mathematical model;

determining an offset time encoded within the received signals, the offset time identifying a source of the received signals; and

determining a time of arrival of the received signals based on the time associated with the peak correlation signal level, the offset time, the mathematical model and an iterative algorithm that avoids a division operation. - -

7.   Claim 23 has been replaced with the following:

- - A method for determining signal time of arrival in a wireless communication system, comprising:

receiving wireless signals on an antenna;

analyzing the received signals to determine a correlation signal levels at predetermined points in time;

determining a maximum signal level at a selected one of the predetermined points in time;

generating an nth order mathematical model, n being greater than two, of a predetermined response function using the maximum signal level at the selected one of the predetermined points in time and correlation signal levels from predetermined points in time adjacent the selected one of the predetermined points in time; and

determining a time associated with a peak correlation signal level based on the mathematical model, and determining coefficients of the mathematical model based on the maximum signal level at the selected one of the predetermined points in time and correlation signal levels from predetermined points in time adjacent the selected one of the predetermined points in time, and determining a time of arrival of the received signals based at least on the time associated with the peak correlation signal level. - -

8.   Claim 27 has been replaced with the following:

- - An article comprising a machine readable medium having stored thereon executable instructions, that, when executed cause one or more machines to perform operations comprising:

receiving correlation signal levels at predetermined points in time;

generating a maximum signal level at a selected one of the predetermined points in time;

generating a second order mathematical model of a predetermined response function using the maximum signal level at the selected one of the predetermined points in time and correlation signal levels from predetermined points in time adjacent the selected one of the predetermined points in time;

determining time information associated with a peak correlation signal level based on the mathematical model;

determining offset time information encoded within the received signals, the offset time identifying a source of the received signals; and

determining a time of arrival of the received signals based on the time information associated with the peak correlation signal level, the offset time information, the mathematical model and an iterative algorithm that avoids a division operation. - -

Reasons for Allowance

9.   Claims 1-4, 6-14, 16-20, 22-25 and 27 are allowed.

10.   For a specific "reasons for allowance" regarding claims 1-4, 6-14, 16-20 and 22-

25, please see the "reasons for allowance" provided on the previous Notice of

Allowance mailed 4/17/08.

11.   Regarding claim 27, the following is an examiner's statement of reasons for

allowance:

While Freiberg et al. (EP1089452) discloses determining correlation levels at

predetermined points in time and determining a maximum signal level and Kohli et al.

(U.S. Pub 2002/0015439) discloses an offset time. None of these references taken

either alone or in combination with the prior art of record discloses an article comprising

a machine readable medium having stored thereon executable instructions, that, when

executed cause one or more machines to perform operations comprising:

"generating a second order polynomial mathematical model of a predetermined

response function using the maximum signal level at the selected one of the

predetermined points in time and correlation signal levels from predetermined points in

time adjacent the selected one of the predetermined points in time; determining time

information associated with a peak correlation signal level based on the mathematical

model; determining offset time information encoded within the received signals, the

offset time identifying a source of the received signal; and further determining a time of

arrival of the received signals based on the time information associated with the peak

correlation signal level, the offset time information, the mathematical model, and an

iterative algorithm that avoids a division operation",

in combination with remaining elements and features of the claimed invention.

It is for these reasons that the applicant's invention defines over the prior art of record.

Conclusion

12.   Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompanying the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance".

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Carlos Ortiz-Rodriguez whose telephone number is 571-272-3766.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Paul Rodriguez can be reached on 571-272-3753. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the

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published applications may be obtained from either Private PAIR or Public PAIR.

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USPTO Customer Service Representative or access to the automated information

system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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September 2, 2008

/Paul L Rodriguez/
Supervisory Patent Examiner, Art Unit 2123